Patent
Attorney's Docket No. F0682

AF/A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
)
Yatin R. ACHARYA) Group Art Unit: 2157
)
Application No.: 09/768,293) Examiner: A. Salad
)
Filed: January 25, 2001)
)
For: SELF-CONFIGURING TRUNKING)
ON A NETWORK DEVICE)

TRANSMITTAL FOR APPEAL BRIEF

U.S. Patent and Trademark Office
Customer Service Window, Mail Stop Appeal Brief-Patents
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

Transmitted herewith is an Appeal Brief in support of the Notice of Appeal filed January 19, 2005.

Enclosed is a check for ☐ $250.00 ☒ $500.00 to cover the Government fee.

The Commissioner is hereby authorized to charge any other appropriate fees that may be required by this paper that are not accounted for above, and to credit any overpayment, to Deposit Account No. 50-1070.

Respectfully submitted,

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Date: February 25, 2005

PATENT
Docket No. **F0682**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of	)	**Mail Stop: APPEAL BRIEF - PATENTS**
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Yatin R. ACHARYA	)	Group Art Unit: 2157
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APPEAL BRIEF

This Appeal Brief is submitted in response to the final Office Action, dated October 19, 2004, and in support of the Notice of Appeal, filed January 19, 2005.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Advanced Micro Devices, Inc.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

Appellant is unaware of any related appeals, interferences or judicial proceedings.

III. STATUS OF CLAIMS

Claims 1-20 are pending in this application.

Claims 1-20 were finally rejected in the Office Action, dated October 19, 2004, and are the subject of the present appeal. These claims are reproduced in the Claim Appendix of this Appeal Brief.

IV. STATUS OF AMENDMENTS

No Amendment was filed subsequent to the final Office Action, dated October 19, 2004.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In the paragraphs that follow, each of the independent claims and means plus function claims that is involved in this appeal and each dependent claim that is argued separately will be recited followed in parenthesis by examples of where support can be found in the specification and drawings.

Claim 1 recites a method for establishing a trunk between first and second network devices (150/350, 180, Fig. 3). The method includes monitoring, via the first network device, at least one of a source address or destination address in packets destined for or received from the second network device (410, Fig. 4; pg. 8, lines 16-20); determining, based on the monitoring, whether a communication pattern exists (420, Fig. 4; pg. 8, lines 20-23); and automatically establishing the trunk between the first network device and second network device when the communication pattern is determined to exist (430, Fig. 4; pg. 8, lines 24-27).

Claim 2 recites that the determining whether a communication pattern exists includes

detecting a predetermined number of packets having identical source or destination addresses (pg. 8, lines 20-23).

Claim 3 recites that the detecting occurs over a predetermined period of time (pg. 8, lines 20-23).

Claim 5 recites that the automatically establishing the trunk includes automatically establishing two or more trunks between the first network device and second network device (pg. 8, lines 25-27; pg. 9, lines 16-19).

Claim 8 is directed to a system for establishing at least one trunk between a first network device (180, Fig. 3) and a second network device (150/350, Fig. 3). The system includes means for monitoring at least one of traffic to the second network device or traffic from the second network device (180, Fig. 3; 245, Fig. 2; 410, Fig. 4; pg. 8, lines 16-20); means for determining, based on the monitoring, if a communication pattern exists (180, Fig. 3; 420, Fig. 4; pg. 20-23); and means for automatically establishing the at least one trunk between the first network device and the second network device when a communication pattern is determined to exist (180, Fig. 3; 430, Fig. 4; pg. 8, lines 24-27).

Claim 9 recites that the means for determining if a communication pattern exists includes means for detecting a predetermined number of packets having identical source or destination addresses (180, Fig. 3; pg. 8, lines 20-23).

Claim 11 recites that the means for automatically establishing the at least one trunk comprises means for associating two or more ports of the first network device with each of the at least one trunk (180, Fig. 3; pg. 8, lines 27-28).

Claim 12 recites that the means for automatically establishing the at least one trunk

further comprises associating one or more trunk control bits with each port, the trunk control bits indicating a status of the port (180, Fig. 3; pg. 8, line 27, to pg. 9, line 6).

Claim 13 recites means for deactivating the at least one trunk when the communication pattern is determined to no longer exist (180, Fig. 3; pg. 9, lines 22-24).

Claim 14 is directed to network device (180, Fig. 3) comprising a receiver configured to receive packets having a source address and a destination address (205, Fig. 2; pg. 4, line 28, to pg. 5, line 3); and an internal rules checker (245, Fig. 2) configured to monitor the received source and destination addresses in the received packets (410, Fig. 4; pg. 8, lines 16-20), determine whether a communication pattern exists over a predetermined period of time (420, Fig. 4; pg. 20-23), and establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists (430, Fig. 4; pg. 8, lines 24-27).

Claim 18 recites at least one register configured to store trunking information (250, Fig. 2; pg. 8, lines 27-31). Claim 18 further recites that when establishing the one or more trunks, the internal rules checker sets at least one bit in the at least one register based on the determined communication pattern (245, Fig. 2; pg. 8, line 28, to pg. 9, line 16).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-6, 8-11, 14, 15, and 17 stand rejected under 35 U.S.C. § 102(e) as anticipated by Hendel et al. (U.S. Patent No. 6,591,303).

B. Claims 7, 13, and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hendel et al. (U.S. Patent No. 6,591,303) in view of Friedman et al. (U.S. Patent No. 5,949,788).

C. Claims 12 and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hendel et al. (U.S. Patent No. 6,591,303) in view of Annaamalai et al. (U.S. Patent No. 6,445,715).

VII. ARGUMENT

A. Rejection under 35 U.S.C. § 102(e) based on Hendel et al. (U.S. Patent No. 6,591,303).

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987).

1. Claims 1, 4, and 6.

With the above principles in mind, Appellant's claim 1 is directed to a method for establishing a trunk between first and second network devices. The method includes monitoring, via the first network device, at least one of a source address or destination address in packets destined for or received from the second network device; determining, based on the monitoring, whether a communication pattern exists; and automatically establishing the trunk between the first network device and second network device when the communication pattern is determined to exist. Hendel et al. does not disclose or suggest this combination of features.

For example, Hendel et al. does not disclose or suggest determining, based on monitoring

at least one of a source address or destination address in packets destined for or received from the second network device, whether a communication pattern exists. The Examiner relies on col. 6, line 66, to col. 7, line 5, of Hendel et al. for allegedly disclosing this feature (final Office Action, pg. 4). Appellant disagrees with the Examiner's interpretation of this section of Hendel et al.

At col. 6, line 66, to col. 7, line 5, Hendel et al. discloses:

> As an improvement, it is possible to have a dynamic mapping function and still maintain frame ordering, given that the function changes are slower than the output queue transit times. For instance, the mapping for a given source address can be determined at the time the first packet with the source address is seen, and eventually aged when the source address is not seen for a period of time.

This section of Hendel et al. discloses that the mapping of packets to output interfaces may be dynamic. This section of Hendel et al. is in no way related to determining whether a communication pattern exists, as required by claim 1.

Further with respect to this feature, the Examiner alleges that "because Hendel discloses monitoring plurality of packets arriving at a port and determines whether a communication pattern(i.e., when a first packet with a source address is seen, then follows packets with same source address for a period of time, then it is determined a communication pattern exist i.e., the packets are transmitted from same source address)" and points to the above section of Hendel et al. for support (final Office Action, pg. 2). Appellant disagrees.

Hendel et al. discloses that traffic is dynamically mapped to an interface of a switch (col. 6, line 60, to col. 7, line 2). Hendel et al. further discloses that the mapping for a source address can be determined at the time the first packet with the source address is seen and that this mapping can be aged out when this source address is not seen for a period of time (col. 7, lines 2-5). Contrary to the Examiner's allegation, Hendel et al. does not disclose or suggest determining

a pattern based on the source address, but merely that a source address can be mapped to an interface.

Moreover, one skilled in the art would readily appreciate that one cannot determine whether a pattern exists based on a single occurrence of an event. Therefore, Hendel et al.'s determination of mapping of a source address to an interface at the time that a first packet with the source address is seen cannot correspond to determining whether a communication pattern exists.

Since Hendel et al. does not disclose determining, based on the monitoring, whether a communication pattern exists, Hendel et al. cannot disclose automatically establishing a trunk between the first network device and second network device when the communication pattern is determined to exist, as also required by claim 1. The Examiner relies on Fig. 6b, col. 6, lines 21-29, and col. 6, line 60, to col. 7, line 5, of Hendel et al. for allegedly disclosing this feature of claim 1 (final Office Action, pg. 4). Appellant submits that these sections of Hendel et al. do not disclose or suggest automatically establishing a trunk between the first network device and second network device when the communication pattern is determined to exist.

Fig. 6b of Hendel et al. depicts a server 610 connected to a switch 620 via trunked segments 631-633. This figure of Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and second network device when the communication pattern is determined to exist, as required by claim 1.

At col. 6, lines 21-29, Hendel et al. discloses:

> In order to maximize the throughput rate of data transmitted on the trunk 630, the first device 610 and the second device 620 select one of the interfaces 631-633 in the trunk 630 and uses the selected interface to transmit data. Load balancing in

> end-nodes typically involves utilizing state information regarding previously sent data, and the status of output queues corresponding to the plurality of interfaces 631-633 in selecting an interface to transmit present data.

This section of Hendel et al. merely discloses the selection of an interface via which to transmit data over a trunk 630. This section of Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and the second network device when the communication pattern is determined to exist, as required by claim 1.

Col. 6, line 60, to col. 7, line 5, of Hendel et al. is reproduced above. This section of Hendel et al. discloses that the mapping of packets to output interfaces may be dynamic. This section of Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and second network device when the communication pattern is determined to exist, as required by claim 1.

One skilled in the art would readily appreciate that selection of an interface via which to transmit data over a trunk is in no way equivalent to automatically establishing a trunk between two devices. Moreover, dynamically mapping a packet to an interface is in no way equivalent to automatically establishing a trunk between two devices. Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and second network device when the communication pattern is determined to exist, as required by claim 1.

Further with respect to this feature of claim 1, the Examiner alleges that "Hendel describes in order to increase capacity a number of arbitrary links between two devices are connected to establish trunk" and points to Fig. 5, col. 4, lines 34-53, and col. 5, line 60, to col. 7, line 1, of Hendel et al. for support (final Office Action, pg. 2). Appellant submits that the Examiner's allegation, regardless of its veracity, does not address the above feature of Appellant's

claim 1.

Appellant's claim 1 does not recite increasing capacity by connecting together a number of arbitrary links between two devices to form a trunk, where a trunk includes a connection having at least two links or interfaces (see col. 5, line 63, to col. 6, line 1). Instead, Appellant's claim 1 recites automatically establishing a trunk between the first network device and second network device when a communication pattern is determined to exist. The Examiner does not explain how the above allegation relates to this feature of Appellant's claim 1.

Nonetheless, Fig. 5 of Hendel et al. depicts a network in which a trunk 540 connects switches 521 and 522 and a trunk 541 connects switch 522 to an end-node 533. This figure of Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and second network device when a communication pattern is determined to exist, as required by claim 1.

At col. 4, lines 34-53, Hendel et al. discloses:

> The present invention increases the capacity of individual network links or interfaces that do not have repeaters at either end while preserving the guidelines specified by IEEE 802 as perceived by other end-nodes and network elements in the network. The capacity is increased by connecting an arbitrary number of similar links or interfaces in parallel. This approach is useful whenever increasing the raw speed of the existing link is not technically or economically feasible, or when the physical proximity makes parallel links more appealing than changing the link to faster interfaces and media types.
>
> FIG. 5 illustrates a network according to an embodiment of the present invention. The network 500 includes a plurality of repeaters 510 and 511 and a plurality of switches 520-522. Trunk 540 connects the switch 521 with the switch 522. Trunk 541 connects switch 522 with end-node 533. Trunk 540 and trunk 541 include a plurality of links or interfaces connected in parallel. Connecting a plurality of links or interfaces in parallel increases the capacity in the path between two devices

This section of Hendel et al. discloses increasing the capacity of individual network links or interfaces that do not have repeaters at either end by connecting an arbitrary number of similar links or interfaces in parallel. This section of Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and second network device when a communication pattern is determined to exist, as required by claim 1.

At col. 5, line 60, to col. 7, line 1, Hendel et al. discloses that trunk connections are assigned identifiers. This section of Hendel et al. further discloses the balancing of a load on a trunk. This section of Hendel et al. in no way discloses or suggests automatically establishing a trunk between the first network device and second network device when a communication pattern is determined to exist, as required by claim 1.

For at least the foregoing reasons, Appellant submits that the rejection of claim 1 under 35 U.S.C. § 102(e) based on Hendel et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

2. Claims 2, 9, and 15.

Claim 2 depends from claim 1. Therefore, claim 2 is not anticipated by Hendel et al. for at least the reasons given above with respect to claim 1. Moreover, claim 2 recites a further feature that is not disclosed or suggested by Hendel et al.

Claim 2 recites that determining whether a communication pattern exists includes detecting a predetermined number of packets having identical source or destination addresses. The Examiner relies on col. 7, lines 2-5, of Hendel et al. for allegedly disclosing this feature (final Office Action, pg. 4). Appellant disagrees.

At col. 7, lines 2-5, Hendel et al. discloses that the mapping of a source address to an

interface can be determined at the time the first packet with the source address is seen and then aged out when the source address is not seen for a period of time. This section of Hendel et al. in no way discloses or suggests that determining whether a communication pattern exists includes detecting a predetermined number of packets having identical source or destination addresses, as required by claim 2.

For at least these additional reasons, Appellant submits that the rejection of claim 2 under 35 U.S.C. § 102(e) based on Hendel et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

3. Claim 3.

Claim 3 depends from claim 2. Therefore, claim 3 is not anticipated by Hendel et al. for at least the reasons given above with respect to claims 1 and 2. Moreover, claim 3 recites a further feature that is not disclosed or suggested by Hendel et al.

Claim 3 recites that detecting a predetermined number of packets having identical source or destination addresses occurs over a predetermined period of time. This detecting is part of determining whether a communication pattern exists. The Examiner relies on col. 7, lines 2-5, of Hendel et al. for allegedly disclosing this feature (final Office Action, pg. 4). Appellant disagrees.

At col. 7, lines 2-5, Hendel et al. discloses that the mapping of a source address to an interface can be determined at the time the first packet with the source address is seen and then aged out when the source address is not seen for a period of time. This section of Hendel et al. in no way discloses or suggests detecting a predetermined number of packets having identical source or destination addresses occurs over a predetermined period of time, as required by claim

3. Instead, this section of Hendel et al. appears to merely disclose the monitoring of source address.

For at least these additional reasons, Appellant submits that the rejection of claim 3 under 35 U.S.C. § 102(e) based on Hendel et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

4. Claim 5.

Claim 5 depends from claim 1. Therefore, claim 5 is not anticipated by Hendel et al. for at least the reasons given above with respect to claim 1. Moreover, claim 5 recites a further feature that is not disclosed or suggested by Hendel et al.

Claim 5 recites that the automatically establishing a trunk includes automatically establishing two or more trunks between the first network device and second network device. The Examiner relies on Fig. 6a and col. 5, line 59, to col. 6, line 1, of Hendel et al. for allegedly disclosing this feature (final Office Action, pg. 5). Appellant disagrees.

At the outset, Appellant notes that since Hendel et al. does not disclose or suggest automatically establishing a trunk between the first network device and second network device when a communication pattern is determined to exist, as required by claim 1, Hendel et al. cannot disclose that the automatically establishing a trunk includes automatically establishing two or more trunks between the first network device and second network device, as required by claim 5.

Nonetheless, Fig. 6a of Hendel et al. depicts a single trunk 630 connecting two devices 610 and 620 (see col. 5, lines 16-18). The Examiner does not explain how this single trunk 630 can correspond to the two or more trunks, required by claim 5. This figure of Hendel et al. does not disclose or suggest automatically establishing two or more trunks between the first network

device and second network device, as required by claim 5.

At col. 5, line 59, to col. 6, line 1, Hendel et al. discloses:

> Referring back to FIG. 6a, the plurality of interfaces 631-633 operate to provide a high bandwidth connection between the first device 610 and the second device 620. The physical interfaces 631-633 share a common source device and destination device with each other. The number of interfaces that are implemented may be any number greater than two and dependent on the bandwidth requirement of the network 200; and "trunk" as used herein refers to any such multiple-interface connection, i.e. a connection having at least two links or interfaces.

This section of Hendel et al. merely discloses that a trunk includes a connection having at least two links or interfaces. The Examiner has not explained how this section of Hendel et al. in any way relates to automatically establishing two or more trunks between the first network device and second network device, as required by claim 5.

For at least these additional reasons, Appellant submits that the rejection of claim 5 under 35 U.S.C. § 102(e) based on Hendel et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

5. Claims 8, 10, and 11.

Claim 8 is directed to a system for establishing at least one trunk between a first network device and a second network device. The system includes means for monitoring at least one of traffic to the second network device or traffic from the second network device; means for determining, based on the monitoring, if a communication pattern exists; and means for automatically establishing the at least one trunk between the first network device and the second network device when a communication pattern is determined to exist. Hendel et al. does not disclose or suggest this combination of features.

For example, Hendel et al. does not disclose or suggest means for determining, based on

monitoring at least one of traffic to a second network device or traffic from the second network device, whether a communication pattern exists. The Examiner relies on col. 6, line 66, to col. 7, line 5, of Hendel et al. for allegedly disclosing this feature (final Office Action, pg. 6). Appellant disagrees with the Examiner's interpretation of this section of Hendel et al.

At col. 6, line 66, to col. 7, line 5, Hendel et al. discloses:

> As an improvement, it is possible to have a dynamic mapping function and still maintain frame ordering, given that the function changes are slower than the output queue transit times. For instance, the mapping for a given source address can be determined at the time the first packet with the source address is seen, and eventually aged when the source address is not seen for a period of time.

This section of Hendel et al. discloses that the mapping of packets to output interfaces may be dynamic. This section of Hendel et al. is in no way related to means for determining whether a communication pattern exists, as required by claim 8.

Moreover, one skilled in the art would readily appreciate that one cannot determine whether a pattern exists based on a single occurrence of an event. Therefore, Hendel et al.'s determination of mapping of a source address to an interface at the time that a first packet with the source address is seen cannot correspond to means for determining whether a communication pattern exists.

Since Hendel et al. does not disclose means for determining whether a communication pattern exists, Hendel et al. cannot disclose means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist, as also required by claim 8. The Examiner relies on Fig. 6b, col. 6, lines 21-29, and col. 6, line 60, to col. 7, line 5, of Hendel et al. for allegedly disclosing this feature of claim 8 (final Office Action, pg. 6). Appellant submits that these sections of Hendel et

al. do not disclose or suggest means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist.

Fig. 6b of Hendel et al. depicts a server 610 connected to a switch 620 via trunked segments 631-633. This figure of Hendel et al. in no way discloses or suggests means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist, as required by claim 8.

At col. 6, lines 21-29, Hendel et al. discloses:

> In order to maximize the throughput rate of data transmitted on the trunk 630, the first device 610 and the second device 620 select one of the interfaces 631-633 in the trunk 630 and uses the selected interface to transmit data. Load balancing in end-nodes typically involves utilizing state information regarding previously sent data, and the status of output queues corresponding to the plurality of interfaces 631-633 in selecting an interface to transmit present data.

This section of Hendel et al. merely discloses the selection of an interface via which to transmit data over a trunk 630. This section of Hendel et al. in no way discloses or suggests means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist, as required by claim 8.

Col. 6, line 60, to col. 7, line 5, of Hendel et al. is reproduced above. This section of Hendel et al. discloses that the mapping of packets to output interfaces may be dynamic. This section of Hendel et al. in no way discloses or suggests means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist, as required by claim 8.

One skilled in the art would readily appreciate that selection of an interface via which to

transmit data over a trunk is in no way equivalent to means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist. Moreover, dynamically mapping a packet to an interface is in no way equivalent to automatically establishing a trunk between two devices. Hendel et al. in no way discloses or suggests means for automatically establishing at least one trunk between the first network device and the second network device when a communication pattern is determined to exist, as required by claim 8.

For at least the foregoing reasons, Appellant submits that the rejection of claim 8 under 35 U.S.C. § 102(e) based on Hendel et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

6. Claims 14 and 17.

Claim 14 is directed to a network device that includes a receiver configured to receive packets having a source address and a destination address; and an internal rules checker configured to monitor the received source and destination addresses in the received packets, determine whether a communication pattern exists over a predetermined period of time, and establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists. Hendel et al. does not disclose or suggest this combination of features.

For example, Hendel et al. does not disclose or suggest an internal rules checker that is configured to determine whether a communication pattern exists over a period of time. The Examiner relies on col. 6, line 66, to col. 7, line 5, of Hendel et al. for allegedly disclosing this feature (final Office Action, pg. 7). Appellant disagrees with the Examiner's interpretation of

this section of Hendel et al.

At col. 6, line 66, to col. 7, line 5, Hendel et al. discloses:

> As an improvement, it is possible to have a dynamic mapping function and still maintain frame ordering, given that the function changes are slower than the output queue transit times. For instance, the mapping for a given source address can be determined at the time the first packet with the source address is seen, and eventually aged when the source address is not seen for a period of time.

This section of Hendel et al. discloses that the mapping of packets to output interfaces may be dynamic. This section of Hendel et al. is in no way related to an internal rules checker that is configured to determine whether a communication pattern exists over a period of time, as required by claim 14.

Moreover, one skilled in the art would readily appreciate that one cannot determine whether a pattern exists based on a single occurrence of an event. Therefore, Hendel et al.'s determination of mapping of a source address to an interface at the time that a first packet with the source address is seen cannot correspond to an internal rules checker that is configured to determine whether a communication pattern exists over a period of time, as required by claim 14.

Since Hendel et al. does not disclose an internal rules checker that is configured to determine whether a communication pattern exists over a period of time, Hendel et al. cannot disclose an internal rules checker that is configured to establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists, as also required by claim 14. The Examiner relies on Fig. 6b, col. 6, lines 21-29 and 55-66, of Hendel et al. for allegedly disclosing this feature of claim 14 (final Office Action, pg. 7). Appellant submits that these sections of Hendel et al. do not disclose or suggest an internal rules checker that is configured to establish one or more trunks between the

network device and at least one other network device in response to determining that a communication pattern exists.

Fig. 6b of Hendel et al. depicts a server 610 connected to a switch 620 via trunked segments 631-633. This figure of Hendel et al. in no way discloses or suggests an internal rules checker that is configured to establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists, as required by claim 14.

At col. 6, lines 21-29, Hendel et al. discloses:

> In order to maximize the throughput rate of data transmitted on the trunk 630, the first device 610 and the second device 620 select one of the interfaces 631-633 in the trunk 630 and uses the selected interface to transmit data. Load balancing in end-nodes typically involves utilizing state information regarding previously sent data, and the status of output queues corresponding to the plurality of interfaces 631-633 in selecting an interface to transmit present data.

This section of Hendel et al. merely discloses the selection of an interface via which to transmit data over a trunk 630. This section of Hendel et al. in no way discloses or suggests an internal rules checker that is configured to establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists, as required by claim 14.

At col. 6, lines 59-66, Hendel et al. discloses:

> Load balancing in switches typically involves selecting an interface based on the source address of the packet, or of the packet's port of arrival. The interface selected could, for example, be looked up on a table or calculated using a deterministic algorithm. This scheme results in a static load balancing function that forwards most of the traffic along the same physical interface.

This section of Hendel et al. discloses the performance of load balancing in switches. This

section of Hendel et al. in no way discloses or suggests an internal rules checker that is configured to establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists, as required by claim 14. In fact, this section of Hendel et al. in no way relates to establishing trunks.

For at least the foregoing reasons, Appellant submits that the rejection of claim 14 under 35 U.S.C. § 102(e) based on Hendel et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

B. Rejection under 35 U.S.C. § 103(a) based on Hendel et al. (U.S. Patent No. 6,591,303) and Friedman et al. (U.S. Patent No. 5,949,788).

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S.Ct. 684, 383 U.S. 1, 148 USPQ 459 (1966). The Examiner is also required to explain how and why one having ordinary skill in the art would have been realistically motivated to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

In establishing the requisite motivation, it has been consistently held that the requisite motivation to support the conclusion of obviousness is not an abstract concept, but must stem

from the prior art as a whole to impel one having ordinary skill in the art to modify a reference or to combine references with a reasonable expectation of successfully achieving some particular realistic objective. See, for example, Interconnect Planning Corp. v. Feil, 227 USPQ 543 (Fed. Cir. 1985). Consistent legal precedent admonishes against the indiscriminate combination of prior art references. Carella v. Starlight Archery, 804 F.2d 135, 231 USPQ 644 (Fed. Cir. 1986); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985).

1. Claims 7, 13, and 16.

With the above principles in mind, Appellant's claim 13 depends from claim 8. The disclosure of Friedman et al. does not remedy the deficiencies in the disclosure of Hendel et al. set forth above with respect to claim 8. Therefore, claim 13 is patentable over Hendel et al. and Friedman et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8. Moreover, this claim is patentable over Hendel et al. and Friedman et al. for reasons of its own.

Claim 13 recites means for deactivating the at least one trunk when the communication pattern is determined to no longer exist. The Examiner admits that Hendel et al. does not disclose this feature and relies on col. 10, lines 39-47, of Friedman et al. for allegedly disclosing this feature (final Office Action, pg. 10). Appellant disagrees.

At col. 10, lines 39-47, Friedman et al. discloses:

> Periodically, in accordance with the TCMP herein disclosed, reselection processing is performed to determine whether any links should be activated or deactivated; i.e. added to or removed from participation in the trunk. In the preferred embodiment, reselection processing occurs approximately every ten (10) seconds upon expiration of a reselection processing timer although it should be

> appreciated that it may be desirable to employ other periods for reselection processing in a network.

This section of Friedman et al. discloses that a reselection process may be performed to determine if links within a trunk should be activated or deactivated. This section of Friedman et al. discloses deactivating links in a trunk and not deactivating a trunk. Therefore, this section of Friedman et al. does not disclose or suggest means for deactivating the at least one trunk when the communication pattern is determined to no longer exist.

Moreover, even assuming, for the sake of argument, that one skilled in the art could reasonably construe deactivating links within a trunk to be equivalent to deactivating a trunk, this section of Friedman et al. in no way discloses or suggests that the deactivating of links within a trunk is performed when a communication pattern is determined to no longer exist.

Also, even assuming, for the sake of argument, that Friedman et al. can reasonably be said to disclose means for deactivating the at least one trunk when the communication pattern is determined to no longer exist, Appellant submits that one skilled in the art would not seek to combine this alleged feature of Friedman et al. with the system of Hendel et al., absent impermissible hindsight.

With respect to motivation, the Examiner alleges that "it would have been obvious to ... deactivate a trunk when the communication pattern is determined to no longer exist as taught by Friedman in order to maximize the bandwidth of the trunk and to assure that the maximum realizable bandwidth is available to the greatest number of connected network devices" and points to col. 3, line 65, to col. 4, line 5, of Friedman et al. for support (final Office Action, pg. 12). Appellant disagrees.

Initially, Appellant notes that is unclear how deactivating a trunk when a communication pattern no longer exists would maximize the bandwidth of the trunk, as alleged by the Examiner. The Examiner does not explain how the bandwidth of a trunk becomes maximized when the trunk is deactivated. The Examiner does not logically explain what is meant by the above allegation. Appellant submits that the Examiner's motivation is merely conclusory and insufficient for establishing a *prima facie* case of obviousness.

Nonetheless, at col. 3, line 65, to col. 4, line 5, Friedman et al. discloses:

> The presently disclosed Trunk Control Message Protocol (TCMP) is employed to provide for dynamic control of the configuration and operation of a trunk port and its constituent MAC interfaces. More specifically, the TCMP detects and handles physical configuration errors and ensures the orderly activation and deactivation of MACs associated with a trunk port 26. Additionally, the trunk control message protocol optimizes the trunk configuration via a link selection process which maximizes the bandwidth of the trunk and which attempts to assure that the maximum realizable bandwidth is available to the greatest number of connected network devices in view of the operational status of the MACs and links involved in communication over a particular trunk.

This section of Friedman et al. discloses that a Trunk Control Message Protocol (TCMP) ensures the orderly activation and deactivation of MACs associated with a trunk port 26. This section of Friedman et al. is in no way related to means for deactivating the at least one trunk when the communication pattern is determined to no longer exist, as required by claim 13, or as the Examiner alleges, maximizing the bandwidth of a trunk by deactivating the trunk.

Appellant submits that the Examiner's motivation for combining Hendel et al. and Friedman et al. is based on impermissible hindsight.

For at least the foregoing reasons, Appellant submits that the rejection of claim 13 under 35 U.S.C. § 103(a) based on Hendel et al. and Friedman et al. is improper. Accordingly,

Appellant requests that the rejection be reversed.

C. Rejection under 35 U.S.C. § 103(a) based on Hendel et al. (U.S. Patent No. 6,591,303) and Annaamalai et al. (U.S. Patent No. 6,445,715).

1. Claim 12.

Appellant's claim 12 depends from claim 8. The disclosure of Annaamalai et al. does not remedy the deficiencies in the disclosure of Hendel et al. set forth above with respect to claim 8. Therefore, claim 12 is patentable over Hendel et al. and Annaamalai et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8. Moreover, this claim is patentable over Hendel et al. and Annaamalai et al. for reasons of its own.

Claim 12 recites that the means for automatically establishing the at least one trunk includes associating one or more trunk control bits with each port, where the trunk control bits indicate a status of the port. The Examiner admits that Hendel et al. does not disclose this feature and relies on col. 8, lines 15-23, of Annaamalai et al. for allegedly disclosing this feature (final Office Action, pg. 12).

Appellant submits that even assuming, for the sake of argument, that the above section of Annaamalai et al. discloses means for automatically establishing the at least one trunk includes associating one or more trunk control bits with each port, where the trunk control bits indicate a status of the port, one skilled in the art would not have been motivated to combine this alleged teaching of Annaamalai et al. with the system disclosed by Hendel et al., absent impermissible hindsight. With respect to motivation, the Examiner alleges that "it would have been obvious ...

to associate one or more trunk control bits with each port, where the trunk control bits indicate the status of a port, because it is desirable to specify current operational trunk status of the port to show whether a port is in use, failed or active in order to respond port initiation request" (final Office Action, pg. 13). Appellant notes that Hendel et al. does not disclose port initiation requests. The Examiner does not explain how incorporating Annaamalai et al.'s trunk control bits into the Hendel et al. system would allow the Hendel et al. system to respond to port initiation requests. Appellant submits that the Examiner's motivation is merely a conclusory statement regarding an alleged benefit of the combination. Such motivation does not satisfy the requirements of 35 U.S.C. § 103.

For at least the foregoing reasons, Appellant submits that the rejection of claim 12 under 35 U.S.C. § 103(a) based on Hendel et al. and Annaamalai et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

2. Claim 18.

Appellant's claim 18 depends from claim 14. The disclosure of Annaamalai et al. does not remedy the deficiencies in the disclosure of Hendel et al. set forth above with respect to claim 14. Therefore, claim 18 is patentable over Hendel et al. and Annaamalai et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 14. Moreover, this claim is patentable over Hendel et al. and Annaamalai et al. for reasons of its own.

Claim 18 recites at least one register configured to store trunking information. Claim 18 further recites that when establishing the one or more trunks, the internal rules checker sets at least one bit in the at least one register based on the determined communication pattern. Hendel

et al. and Annaamalai et al. do not disclose or suggest this combination of features.

For example, Hendel et al. and Annaamalai et al. do not disclose or suggest at least one register configured to store trunking information. The Examiner admits that Hendel et al. does not disclose this feature and relies on Fig. 3, col. 6, lines 47-55, and col. 8, lines 15-23, of Annaamalai et al. for allegedly disclosing this feature (final Office Action, pg. 13). Appellant disagrees.

Fig. 3 of Annaamalai et al. depicts a network switch 300 that includes a supervisor module 380 connected to ports 312, an interface card 314, a parsing engine 303, a layer 2 forwarding engine 330, and a forwarding table 332. This figure does not disclose or suggest at least one register configured to store trunking information, as required by claim 18.

At col. 6, lines 47-55, Annaamalai et al. discloses:

> Circuit 316 located on the port card 312 prefixes a VLAN value associated with the input port to an incoming frame. A VLAN value is generally assigned to each internal port of the switch and functions to further associate the port with a particular VLAN group. In the illustrative embodiment, the forwarding engine 330, the parsing engine 303 and the circuit 316 are each preferably implemented as a plurality of hardware registers and combinational logic configured to produce a sequential logic circuit, such as a state machine.

This section of Annaamalai et al. discloses that forwarding engine 330, parsing engine 303, and circuit 316 are preferably implemented as a plurality of hardware registers and combinational logic. This section of Annaamalai et al. does not disclose or suggest, however, that any of the plurality of hardware registers is configured to store trunking information, as required by claim 18.

At col. 8, lines 15-23, Annaamalai et al. discloses:

> The TOS subfield 422 is a 1-bit field that normally specifies the present operational trunk status of the port P; an exception is when the port is in a DTP negotiation phase, at which point the subfield specifies trunk-status-to-be for the port. In the illustrative embodiment, the operational status is either access (NT) or trunk (T). PIC 360 of each port P is configured to operate initially as a non-trunk (i.e., access) port and, if the port fails to negotiate to a trunk status, it remains an access port.

This section of Annaamalai et al. discloses that a trunk operational status (TOS) field can specify the operational status of a port P. Annaamalai et al. discloses that the TOS field is part of a message 400 that a dynamic trunk protocol (DTP) conveys over a trunk capable link (see col. 7, lines 58-62). Annaamalai et al. does not disclose or suggest that message 400 is a register. Therefore, Annaamalai et al. does not disclose at least one register configured to store trunking information, as required by claim 18.

Appellant submits that even assuming, for the sake of argument, that one or more of the above sections of Annaamalai et al. can reasonably be alleged to disclose at least one register configured to store trunking information, one skilled in the art would not have been motivated to combine this alleged teaching of Annaamalai et al. with the system disclosed by Hendel et al., absent impermissible hindsight. With respect to motivation, the Examiner alleges that "it would have been obvious ... to set at least one bit in at least one register, because it is desirable to specify current operational trunk status of the port to show whether a port is in use, failed or active in order to respond port initiation request" (final Office Action, pp. 13-14). Appellant notes that Hendel et al. does not disclose port initiation requests. The Examiner does not explain how incorporating Annaamalai et al.'s alleged disclosure of setting at least one bit in a register into the Hendel et al. system would allow the Hendel et al. system to respond to port initiation requests. Appellant submits that the Examiner's motivation is merely a conclusory statement

regarding an alleged benefit of the combination. Such motivation does not satisfy the requirements of 35 U.S.C. § 103.

For at least the foregoing reasons, Appellant submits that the rejection of claim 18 under 35 U.S.C. § 103(a) based on Hendel et al. and Annaamalai et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

VIII. CONCLUSION

In view of the foregoing arguments, Appellant respectfully solicits the Honorable Board to reverse the Examiner's rejections of claims 1-18 under 35 U.S.C. §§ 102 and 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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CLAIM APPENDIX

1. A method for establishing a trunk between first and second network devices, comprising:

monitoring, via the first network device, at least one of a source address or destination address in packets destined for or received from the second network device;

determining, based on the monitoring, whether a communication pattern exists; and

automatically establishing the trunk between the first network device and second network device when the communication pattern is determined to exist.

2. The method of claim 1 wherein the determining whether a communication pattern exists includes:

detecting a predetermined number of packets having identical source or destination addresses.

3. The method of claim 2 wherein the detecting occurs over a predetermined period of time.

4. The method of claim 1 wherein the first network device includes a multiport switch and the second network device includes a server.

5. The method of claim 1 wherein automatically establishing the trunk includes:

automatically establishing two or more trunks between the first network device and second network device.

6. The method of claim 1 wherein automatically establishing the trunk includes:

assigning at least two ports on the first network device to the trunk.

7. The method of claim 6 further comprising:

deactivating the trunk when the communication pattern is determined to no longer exist and reassigning the ports to new trunks if a new pattern is determined.

8. A system for establishing at least one trunk between a first network device and a second network device, comprising:

means for monitoring at least one of traffic to the second network device or traffic from the second network device;

means for determining, based on the monitoring, if a communication pattern exists; and

means for automatically establishing the at least one trunk between the first network device and the second network device when a communication pattern is determined to exist.

9. The system of claim 8 wherein the means for determining if a communication pattern exists includes:

means for detecting a predetermined number of packets having identical source or destination addresses.

10. The system of claim 8 wherein the first network device includes a multiport switch and the second network device includes a server.

11. The system of claim 8 wherein the means for automatically establishing the at least one trunk comprises:

means for associating two or more ports of the first network device with each of the at least one trunk.

12. The system of claim 11 wherein the means for automatically establishing the at least one trunk further comprises:

associating one or more trunk control bits with each port, the trunk control bits indicating a status of the port.

13. The system of claim 8 further comprising:

means for deactivating the at least one trunk when the communication pattern is determined to no longer exist.

14. A network device comprising:

a receiver configured to receive packets having a source address and a destination

address; and

an internal rules checker configured to monitor the received source and destination addresses in the received packets, determine whether a communication pattern exists over a predetermined period of time, and establish one or more trunks between the network device and at least one other network device in response to determining that a communication pattern exists.

15. The network device of claim 14 wherein, when determining whether a communication pattern exists, the internal rules checker is configured to:

detect a predetermined number of packets having identical source or destination addresses over the predetermined period of time.

16. The network device of claim 14 wherein the internal rules checker is further configured to:

deactivate the one or more trunks when the communication pattern is determined to no longer exist.

17. The network device of claim 14 wherein, when establishing the one or more trunks, the internal rules checker is configured to:

assign at least two ports on the network device to each trunk.

18. The network device of claim 14 further comprising:

at least one register configured to store trunking information,

wherein, when establishing the one or more trunks, the internal rules checker sets at least one bit in the at least one register based on the determined communication pattern.